United States Government **Department of Energy**

memorandum

Idaho Operations Office

Date: August 21, 2006

Subject: Management Control Review (AS-BMD-FS-06-003)

To: Dennis R. Spurgeon, Assistant Secretary
for Nuclear Energy

In accordance with the Federal Managers' Financial Integrity Act, the Idaho Operations Office (DOE-ID) has completed a summary management control review of management controls in effect for fiscal year (FY) 2006. The review was performed in conformance with Departmental guidelines and included a review of whether management controls were in compliance with underlying management principles that incorporate the Government Accountability Office's *Standards for Internal Controls in the Federal Government.* The review included consideration of: The DOE FY 2005 Performance and Accountability Report, including Inspector General (IG) and Government Accountability Office (GAO) management challenges; results of audit reports; internal management reviews; computer security reviews; assurances from the Idaho National Laboratory (INL) site/facility management contractors under my cognizance; and other known information. In addition, our review considered the areas of: 1) environmental management, 2) nuclear safety management, and 3) non-nuclear safety management.

As a result of this work, we have concluded that the financial systems managed by DOE-ID and under DOE-ID control conform to federal financial management system requirements outlined in Chapter IV of DOE O 413.1A, and also that these financial management systems of DOE-ID and its major site and facilities management contractors are in conformance with generally accepted accounting policies and procedures. Although the financial management systems conform to applicable requirements, reportable problems were identified in the environmental management and nuclear safety management areas.

The results of the review indicate that there is reasonable assurance that management controls were working effectively and that both program and administrative functions were performed economically, efficiently, and consistent with applicable laws. Also, property, funds, and other resources were safeguarded against waste, loss, or unauthorized use; obligations and costs were proper; and accountability for assets was maintained.

The above review indicated that we successfully closed two reportable problems initially reported in FY 2004 and continued into FY 2005:

1. The Advanced Mixed Waste Treatment Project (AMWTP) Schedule Delay. Through July 29, 2006, 8,490m3 of transuranic (TRU) waste has been shipped in addition to the original 3,100m3 campaign. Despite missing the original December 2005 milestone by a few weeks, these shipping numbers show that we can now maintain the 2,000m3/year rolling average outlined in the Idaho Settlement Agreement with a start date for measurement of January 1, 2003.

2. Idaho Spent Fuel Facility (ISFF) - Spent Nuclear Fuel (SNF) Dry Storage Project (SNFDSP). A decision was made to modify the subject contract with Foster Wheeler Environmental Corporation (FWENC). The modification was signed February 14, 2006. As a part of the agreement, DOE-ID took ownership of the Idaho Spent Fuel Facility (ISFF) design and FWENC consented to (and DOE is subsequently applying for) transfer of the Nuclear Regulatory Commission (NRC) license for the ISFF to DOE-ID. The Secretary delegated the authority to the Manager of DOE-ID to act as the Secretary's authorized representative per the requirements of 10 CFR 72.16(b) in this regard. The Idaho Cleanup Project (ICP) is using the DOE O 413.3 process to confirm Mission Need and will select an appropriate path forward to provide necessary SNF packaging, storage, and load-out capacity in FY 2007. These actions will rectify the schedule problems caused by FWENC, allowing DOE-ID to meet the required milestone of January 1, 2035.

The review disclosed, however, that four reportable problems previously identified in FY 2004 and 2005 continued into FY 2006. Reportable problems are summarized as follows (pertinent records are on file at DOE-ID and are available upon request):

1. Nuclear Safety Management at the Materials and Fuels Complex (MFC), Idaho National Laboratory (INL). As part of transition to the INL Site Contractor that occurred in February 2005, we performed a review of Nuclear Safety Management practices at the MFC (formerly named Argonne National Laboratory-West). Our review disclosed that the MFC Documented Safety Analyses (DSA) for fixed nuclear facilities do not meet some of the safe harbor provisions of 10 CFR 830, Subpart B, Nuclear Safety Management Rule. An attached Action Plan summarizes the control features planned to ensure that MFC meets the safe harbor provisions of the Nuclear Safety Management Rule. Through FY 2006, 3 of 13 DSAs will have been submitted, consistent with the action plan.

2. Long-Term Viability of the Advanced Test Reactor (ATR). An Action Plan was previously reported in FY 2004 and FY 2005, with the attached Action Plan updating developments and schedule status through FY 2006. Three issues must be addressed to ensure the long-term viability of the ATR, including: 1) providing the necessary funding to fully address equipment aging issues; 2) availability and acquisition of fresh fuel; and 3) beryllium supply and disposal. These issues received significant attention in FY 2005, and action was taken to develop and fund an ATR Life Extension Program that addresses each of these issues on a priority basis. In FY 2006, fresh fuel supplies have been purchased and delivered consistent with meeting the schedule of the action plan.

3. High-Level Waste (HLW) Program – Sodium-Bearing Waste (SBW). DOE is required to treat SBW and cease the use of the Tank Farm Facility (TFF) at the Idaho Nuclear Technology and Engineering Center (INTEC) on the INL Site for storing SBW by December 31, 2012, per the 1995 Idaho Settlement Agreement and Notice of Noncompliance Consent Order, respectively. The treatment of the SBW and closure of the TFF tanks relate to each other and are combined together for the scope of the attached

Action Plan. The Federal District Court in Idaho ruled in July 2003 that the DOE O 435.1 Waste Incidental to Reprocessing (WIR) Evaluation Process for categorizing certain waste streams associated with past SNF reprocessing is not valid. This affected the process for making waste determinations for both closure of the TFF tanks and disposal of SBW. The Department of Justice (DOJ) appealed this ruling to the Ninth Circuit Court of Appeals, and the District Court decision was reversed and remanded with direction to dismiss the action. The District Court dismissed the action on March 6, 2006. On October 28, 2004, Congress passed the FY 2005 National Defense Authorization Act. Among other provisions of the Act, Section 3116 specifies criteria to be used by the Secretary of Energy, in consultation with the Nuclear Regulatory Commission, to determine the appropriate classification of certain radioactive wastes resulting from the reprocessing of SNF (waste disposed on site that includes residuals within the TFF tanks). The Section 3116 process substitutes for the 435.1 process for waste determinations related to the TFF tanks. As a Government Furnished and Service Item (GFSI) under the ICP Contract, DOE needed to issue a Section 3116 waste determination by the end of July 2006 (see SBW Action Plan for issue discussion) to support DOE and the contractor's schedule for FY 2006 TFF closure activities. The current approach for SBW disposal is to retrieve and stabilize the remaining liquid SBW inventory. DOE issued a Record of Decision on December 13, 2005, that chose the Steam Reforming technology for SBW treatment. The DOE's preferred disposal path for this waste is disposal as TRU waste at the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. Until such time as the regulatory approvals are obtained and a determination made that the waste is TRU, DOE will manage the waste to allow disposal at WIPP or at a geologic repository for SNF and HLW. As a GFSI under the ICP Contract, the outcome of the SBW Waste Determination directly affects the contractor's SBW treatment activities at INTEC.

4. Remediation of the INL Radioactive Waste Management Complex (RWMC). The state of Idaho filed suit in District Court to determine if the language in Section B of the 1995 Idaho Settlement Agreement which states that DOE shall ship all TRU waste now located at INL, estimated at that time as 65,000 cubic meters in volume, to the WIPP or other such facility designated by DOE, by a target date of December 31, 2015, and in no event later than December 31, 2018, applied to the waste buried in the RWMC Subsurface Disposal Area (SDA). On March 31, 2003, the United States District Court for Idaho issued a ruling that the Idaho Settlement Agreement requirement applies to the TRU waste buried in the SDA, as well as to the stored TRU waste. The Ninth Circuit Court of Appeals reversed the decision and remanded the case back to the District Court for further proceedings. On May 25, 2006, the District Court ruled that both the 1995 Agreement and the 1991 INL Cleanup Agreement applied to buried waste. A Notice of Appeal was filed on July 24, 2006. The final outcome may have significant ramifications for remediation approaches relative to cost and worker protection, funding availability, and compliance to regulatory commitments. Historically, the INL has considered the Settlement Agreement disposition requirement to apply to wastes stored above ground (65,000 cubic meters), but not buried (previously disposed) wastes.

Our review also disclosed three emerging issues, the first two are continuations from FY 2005 and the third is new in FY 2006, as follows:

1. Possible Financial Statement Ramifications. Implementation to the new Departmental accounting system last year resulted in a disclaimer of opinion on the financial statements by the independent auditors, KPMG. DOE-HQ implemented a Tiger Team approach to identifying needed corrective actions to resolve the financial statement audit deficiencies. Multiple teams have been formed and are working corrective actions to the issues that led to the financial statement problems. Tiger Team corrective action plans are being communicated to the field sites with revised processes/practices being put in place to correct the deficiencies. The DOE-ID Budget and Accounting staff have climbed a steep curve on learning and understanding the new system. We are starting to gain a comfort zone in understanding all of the revised processes and system operating requirements. Standard corporate reporting capabilities continue to be a problem area with the new system, as would be expected. DOE-HQ has created additional reports to assist the field sites in capturing information that can be used for analysis for areas of concern. The DOE is still in a reactionary mode of creating reports to address problems versus having the time to create reports that will enhance overall financial reporting for program managers. This later issue will be addressed once the corrective actions are in place for the deficiencies that resulted in the disclaimer of opinion on the 2005 financial statements. We will continue to monitor this as an emerging issue.

2. Low-Level Waste (LLW) Disposal, Long-Term Path Forward. The Idaho Branch Office of the Pittsburgh Naval Reactors Office has raised a concern about the lack of a viable, long-term path forward for LLW disposal to support INL and INL-tenant missions. With the pending closure of the RWMC, a disposal path for contact and remote-handled LLW generated by INL and INL-tenant missions must be implemented. DOE-ID directed INL to develop a plan for long-term off-site LLW disposal in coordination with Naval Reactors and other affected site tenants. This plan was submitted on August 1, 2006, and is being evaluated. This will become an issue if a viable path forward cannot be agreed upon.

3. Failure to Invest in Infrastructure and Systems is Contributing to Safety Issues at INL. Prior to the creation of INL and its associated new missions, the Idaho Site was managed with an emphasis on providing infrastructure to facilitate environmental cleanup and facility disposition. This mission justified only limited life-cycle planning and maintenance. As a result, maintenance was not adequately supported, and an increased backlog of deferred maintenance was allowed to accumulate. In addition, the redirection of missions for INL requires many facilities to be modified and updated to meet new functional requirements. Funding for increased maintenance and facility modernization has been requested, but has not yet been realized while the aging buildings have continued to degrade. The available maintenance funding has been focused on keeping the buildings in a safe condition, but without a significant increase in infrastructure funding, several facilities may degrade to a condition not able to support workers safely. At this time, no reportable problems have been identified; however, available infrastructure funding is achieving only the most critical objectives.

Overall, improvements and funding requirements defined in the Ten-Year Site Plan have yielded very limited success to date. Unless a renewed emphasis is placed on the Infrastructure/Facilities Management Program, the INL infrastructure will continue to degrade, contributing to a reduced health and safety posture for employees and reduced ability to support or aid in the development and success of the INL mission.

4. Inventory Management Control Weakness. On July 20, 2006, DOE-ID received a Freedom of Information Act (FOIA) request for information on all laptop computers that have been reported stolen, lost, or missing for calendar years 2001-2006. This request was sent to all DOE offices. On August 8, 2006, the FOIA data for DOE-ID and its three major site contractors was collected. Preliminary information reflected that there were 105 laptops declared missing from the INL over the five-year period; 17 of these have been recovered to date. Initial investigations indicate that some of these missing laptops were in fact disposed of properly, but inaccurate property records are not reflecting this disposal. Actions to determine the disposition of these missing items, identify property management control problems, and correct the deficiencies are underway.

The attachments to this report, available upon request, contain detailed plans and schedules for correcting reportable problems relevant to DOE-ID's management controls. If you have questions or require additional information, please call me on (208) 526-5665.

Elizabeth D. Sellers
Manager

Attachments (7)

cc: I. R. Triay, DOE-HQ, EM-3 (w/EM Checklist)
K. H. Donald, DOE-HQ, NR-1

FY 2006 Index and Crosswalk to Action Plans

Idaho Operations Office

PROGRAM / ADMINISTRATIVE FUNCTIONS	TITLE	HQ ORG	OPEN / CLOSED	PG#

Action Plan Submitted with FY 2005 Assurance Memorandum that Continues for FY 2006 (available upon request):

Nuclear Safety Program	Nuclear Safety Management Reportable Problem at the Materials and Fuels Complex (MFC), Idaho National Laboratory (INL)	NE	Open	1

Action Plans Submitted with FY 2004 Assurance Memorandum that Continue for FY 2006 (available upon request):

Nuclear Energy Program	Long-Term Viability of the Advanced Test Reactor (ATR)	NE	Open	2
Radioactive Waste Program	Sodium-Bearing Waste (SBW)	EM	Open	3
Environmental Restoration (CERCLA) Program	Remediation of the INL Radioactive Waste Management Complex (RWMC)	EM	Open	4

Action Plans Submitted with FY 2004 Assurance Memorandum that have been closed in FY 2006:

Waste Disposition Program	Advanced Mixed Waste Treatment Project (AMWTP) Schedule Delay	EM	Closed	5
SNF Dry Storage Program	Idaho Spent Fuel Facility (ISFF) -- Spent Nuclear Fuel (SNF) Dry Storage Project (SNFDSP)	EM	Closed	6

ACTION PLAN
IDAHO OPERATIONS OFFICE
June 28, 2006

TITLE: Nuclear Safety Management Reportable Problem at the Materials and Fuels Complex (MFC), Idaho National Laboratory (INL)

ACTION PLAN: Reportable Problem X Reportable Non-Conformance __

HQ ORGANIZATION: NE **PROGRAM/ADMIN. FUNCTION:** Nuclear Safety Program

DESCRIPTION:

As part of transition to the INL Site contractor that occurred in February 2005, DOE-ID performed a review of Nuclear Safety Management practices at the MFC (formerly named Argonne National Laboratory-West). Our review disclosed that the MFC Documented Safety Analyses (DSAs) for fixed nuclear facilities do not meet some of the safe harbor provisions of 10 CFR 830, Subpart B, Nuclear Safety Management Rule. Impacts to the Department of Energy (DOE) could be loss or delay of critical missions including loss of public trust and confidence. This could include shutting down the affected facilities or placing them in a non–operational status.

DISCUSSION:

There are 13 fixed Nuclear Facilities at the MFC managed by Battelle Energy Alliance, LLC (BEA) for the Idaho Operations Office (DOE-ID). Responsibility for these facilities was transferred from the Chicago Operations Office to DOE-ID in February 2005. The Nuclear Safety Management Rule 10 CFR 830, Subpart B, applies to the safety basis for these categories of nuclear facilities on the INL. Each of these facilities is required to have a Safety Analysis Report or Documented Safety Analysis that meets current requirements and fulfills the safe harbor provisions of the rule.

PERFORMANCE:

The DOE-ID Nuclear Safety Systems subject matter expert completed the review with input provided from discussions with team staff and interviews with Technical Support Staff and the INL Site Contract Transition Team. The review included assessment of Documented Safety Analysis Status and procedures with respect to nuclear safety at Argonne National Laboratory-West (now known as the MFC). This assessment included a review of management control systems and checks and balances in place to provide for oversight of nuclear safety. It also included a review of roles, responsibilities, and technical qualifications of Argonne National Laboratory-West, DOE Chicago, staff. Although Federal technical qualifications were not documented in accordance with Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 93-3, staff possessed the requisite knowledge, skills, and abilities for oversight of nuclear safety.

ROOT CAUSE:

The root cause of this reportable problem is incomplete implementation of the Nuclear Safety Management Rule at existing nuclear facilities at Argonne National Laboratory-West. A contributing cause was the flow of technical information between Argonne National Laboratory-West and DOE Chicago.

ASSESSMENT OF PROGRESS:

The contractor developed a corrective action plan, titled: *Work Plan for Upgrade of Materials and Fuels Complex Nuclear Facility Safety Basis Documents* (NS-18308) and submitted it to DOE-ID on April 19, 2005. The plan commits to starting revision of the non-compliant Documented Safety Analysis (DSA) and Technical Safety Requirement documents on a risk-based and mission–prioritized schedule in July 2005. The last of 13 revised DSAs would be submitted to DOE-ID for approval in 2009. The total estimated cost for these upgrades is approximately $11M over a four-year period; these estimated costs do not include facility-specific implementing costs. NS-18308 specifies priorities and milestones, and is available upon request. NS-18308 will be included in the annual Safety Performance Objectives, Measures, and Commitments made to DOE-ID under the Integrated Safety Management System per DOE G 450.4. By October 2006, 3 of 13 MFC DSAs will have been upgraded and sent to DOE-ID for approval.

SUCCESS INDICATORS FOR CLOSED CORRECTIVE ACTION PLANS:

Is Plan closed___Yes_X_No, not applicable

W. G. Bass, Team Leader
Materials and Fuels Complex

8/14/06
Date

R. F. Wilbur, Acting Assistant Manager
Infrastructure Support

8/14/06
Date

ACTION PLAN
IDAHO OPERATIONS OFFICE
August 15, 2006

TITLE: Long-Term Viability of the Advanced Test Reactor (ATR)

ACTION PLAN: Reportable Problem _X_ Reportable Non-Conformance___

HQ ORGANIZATION: _NE **PROGRAM /ADMIN. FUNCTION:** Nuclear Energy

DESCRIPTION:

This Action Plan is a summary of previously reported action plans and developments that occurred during Fiscal Year (FY) 2006. Three issues must be addressed to ensure the long-term viability of the ATR. They include: 1) providing the necessary funding to fully address equipment-aging issues and modernizing the reactor; 2) availability and acquisition of fresh fuel and its transportation containers; and 3) beryllium supply and disposal post irradiation. In FY 2006, Revision 2 of the ATR Life Extension Program (LEP) Plan was released. The ATR LEP Plan specifically addresses each of the three issues, and identifies key activities and actions to ensure the long-term viability of the Advanced Test Reactor.

In FY 2004, the Manager of the Idaho Operations Office (DOE-ID) chartered an independent team to conduct an assessment of the reactor. The review concluded that ATR could safely operate in the near-term. The review recommended development of an ATR LEP Plan to address longer-term issues, such as aging and deterioration of equipment. The Office of Nuclear Energy (NE) has taken a lead role in the ATR LEP to ensure the nation's nuclear energy agenda is achievable. In FY 2006, the independent team performed an assessment of the ATR and provided input on upgrading the ATR with modernization projects.

In FY 2005, $10M of supplemental funding was appropriated by Congress to advance the ATR's Gas Test Loop Project and address deficiencies and needed improvements at the reactor, including: staffing shortfalls; material deficiencies; reconstitution of the ATR's design-basis; acquisition of fresh fuel; and resolution of strategic issues.

In FY 2006, $20M was provided for the ATR LEP to start resolving the maintenance backlog, performing a Probabilistic Risk Assessment, a Design Basis Reconstitution, a Seismic Qualification Update, a Material Condition Assessment, and working on strategic issues such as the fresh fuel supply, beryllium supply, and waste issues. The ATR LEP is undergoing a transformation from a Program to a DOE Order 413.3 Project. A Project Execution Plan is being prepared for NE that will lay out the scope, schedule, and milestones for the 10-year, $20M-per-year project to drive to conclusion all issues raised in this Action Plan. Additional funding for the independent team's recommendation on modernization projects is under review.

In FY 2004, ATR fresh fuel was threatened by potential shutdown of the BWXT processing line in Lynchburg, VA. Naval Reactors (NR) provided an additional $3.4M of funding for fresh fuel procurements in late FY 2004 to maintain the production facility. In FY 2005, NE and NR provided an additional $2M of funding for fresh fuel procurement. NE has appointed a Fuel Coordinator to ensure that research reactor fuel orders from all federal customers are coordinated to ensure continued viability of the production line. In FY 2005, the Idaho National Laboratory (INL) Contractor, Battelle Energy Alliance (BEA), provided funds to replace aging and unreliable equipment in the BWXT fuel production facility. In FY 2006, fuel purchases by the High Flux Isotope Reactor (HFIR) at Oak Ridge National Laboratory may be placed on hold, which may cause price increases to other customers of the BWXT fuel production facility.

The ATR fresh fuel supply is threatened by a lack of transportation containers for fuel elements. The existing fuel element transportation containers are being taken out of service at an increasing rate. The existing Type B transportation container transports four fuel elements at a time. Replacement of a Type B container requires considerable licensing, design, and testing. The contractor, BEA, is proposing to replace the Type B container with a Type AF container that only holds one fuel element at a time and requires less licensing, design, and testing. The Type AF container can be acquired in time to prevent a potential shutdown of fuel delivery.

The ATR Beryllium Reflectors and Outer Shim Cylinders were manufactured in the past from national stockpile beryllium. In 2001, mining of U.S. beryllium ceased, resulting in use of the existing stockpile. It was determined that existing inventories would not support manufacturing of the next ATR reflector by FY 2008. In FY 2005, Brush-Wellman successfully negotiated the purchase of Kazakhstan's beryllium stockpile with a high iron content that makes manufacturing of components difficult. Although issues still remain to be resolved, the Kazakhstan beryllium appears to be a viable option for manufacturing ATR core components upon mixing with existing stockpile beryllium.

In addition to supply issues, irradiated beryllium currently has no disposal path. Uranium impurities in beryllium produce transuranic (TRU) radionuclides in excess of 100nCi/gm upon exposure to high neutron fluence creating a TRU waste. Consequently, ATR beryllium components have been classified as Remote-Handled TRU Waste. Through computer modeling, it was determined that beryllium with less than 3 parts per million of uranium was required to not generate TRU waste. On March 26, 2003, a Plan for Waste with No Path to Disposal was approved by DOE-ID for the ATR beryllium. In FY 2004, an evaluation of interim storage options was completed for irradiated beryllium currently stored in the ATR canal. There exists a number of ATR Beryllium Reflectors and Outer Shim Cylinders that are stored in the ATR canal that will need processing prior to disposal once a disposal path is determined. Research on different processing techniques post irradiation of beryllium is underway. In FY 2005, DOE included the irradiated beryllium in the Greater Than Class C data call for performing an Environmental Impact Statement (EIS) with an anticipated September 2006 Notice of Intent to perform an EIS.

ASSESSMENT OF PROGRESS:

The FY 2006 budget provided $20M for activities associated with the ATR LEP. The proposed ATR LEP budget for FY 2007 and proposed subsequent years' budget is $20M per year through 2015. Assessment activities are underway to fully characterize plant conditions to ensure the highest-risk equipment and systems are upgraded first to extend the life of the ATR or overcome potential safety and/or operational problems.

During FY 2006, fresh fuel supplies have been purchased and delivered. The ATR is working with NE on fuel purchases and coordinating with the High Flux Isotope Reactor (HFIR) in Oak Ridge to determine if there would be any impact by HFIR placing fuel purchases on hold. Design and procurement of a Type AF fuel element transportation container is proceeding to help determine operational needs, and develop fuel handling and transportation procedures.

The Kazakhstan beryllium procured is being mixed in FY 2006 with stockpile beryllium to lower the iron and uranium content. It is still to be determined if 3 PPM uranium is possible and needed. The Kazakhstan supplies relieved short-term supply issues that threatened the availability of beryllium for ATR components for the next core-internals-changeout. Processing techniques for lowering uranium pre-irradiation and post-irradiation processing is underway.

Critical Milestones	Original Target Completion Month/Year	Revised Target or Actual Completion Month/Year
1. Approve Waste with no Path to Disposition Plan for Irradiated Beryllium	03/03	03/03
2. Conduct Independent Assessment of ATR Operations and Plans	02/04	02/04
3. Initiate Scope Identified in ATR Long-Range Operating Plan	05/05	2/05
4. Develop Coordinated Plan for Fresh Fuel Purchases and Equipment Upgrades to BWXT Facilities	06/05	1/05
5. Establish Inter-Governmental Beryllium Coordinating Committee	6/05	No longer needed
6. Successfully Complete Bench-Scale Proof-of-Principal Studies for Processing Irradiated Beryllium for Disposal	9/07	
7. Initiate Procurement of New In-Core Beryllium Components for ATR	6/08	

SUCCESS INDICATORS FOR CLOSED CORRECTIVE ACTION PLANS:

Is Plan closed___Yes_X_No/not applicable

Name: _____ Date: 8/16/06
FOR Robert D. Boston, Team Leader
Reactor Technology Complex

Name: _____ Date: 8/16/06
Roger Wilbur, Assistant Manager (Acting)
for Infrastructure Support

ACTION PLAN
IDAHO OPERATIONS OFFICE
July 2006

TITLE: Sodium-Bearing Waste (SBW)/Tank Farm Closure

ACTION PLAN: Reportable Problem X Reportable Non-Conformance __

HQ ORGANIZATION: EM PROGRAM/ADMIN. FUNCTION: Radioactive Waste

DESCRIPTION:

DOE is required to treat Sodium Bearing Waste (SBW) and cease use of the Tank Farm Facility (TFF) for storing SBW by December 31, 2012, per the Idaho Settlement Agreement and Notice of Noncompliance Consent Order, respectively. The treatment of SBW and the closure of the TFF tanks relate to each other and are combined together for the scope of this Action Plan.

The current approach for SBW disposal is to retrieve and stabilize the remaining liquid SBW. The Idaho Cleanup Project (ICP) contract baseline includes Steam Reforming as the preferred treatment for the SBW. The Department's preferred disposal path for this treated waste is disposal at the Waste Isolation Pilot Plant (WIPP). Therefore, the Department will perform a Waste Determination and pursue the appropriate regulatory approvals from Environmental Protection Agency (EPA) and the New Mexico Environment Department (NMED), to allow disposal of the sodium-bearing waste at WIPP. Until such time as the waste determination is made and the regulatory approvals are obtained, the Department will manage the waste to permit disposal at WIPP or at a Federal Repository for High-Level Waste.

The Department's preferred disposal strategy of using WIPP could dispose of INL's SBW inventory more than 20 years ahead of the previous baseline that had disposal of the waste as HLW. To support the Idaho Cleanup Project contractor's critical path for SBW treatment, DOE must approve DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets, Critical Decisions, in a timely manner.

The approach for Tank Farm closure is to clean the storage tanks as they are emptied (via consolidation and treatment of tank waste) using a water spray system. Flush water, along with the removed waste, is concentrated in existing evaporator systems and transferred to other operating tanks to await future treatment in the SBW Treatment Facility. Once sampling has verified tank cleanliness, final closure actions included filling the tanks, vaults, and interconnecting piping and ancillary equipment with a grout material for long-term stability. Since the tank farm tanks were used for storage of wastes associated with spent fuel reprocessing, a waste determination is needed (under Section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005) to demonstrate that the residuals in the closed tank farm would not be considered as high-level waste. In addition, an amended Record of Decision under the Idaho High-Level Waste and Facilities Disposition Environmental Impact Statement is needed to support tank closures.

ASSESSMENT OF PROGRESS:

DOE has consolidated all tank farm waste into three operational tanks in preparation of future treatment, and has cleaned all emptied Tank Farm Facility tanks in preparation for closure. The SBW project Critical Decision (CD-0) was approved January 3, 2005, and CD-1 was approved in August 2005. Preliminary Design for the SBW Treatment Facility was completed in May 2006, and a request for Critical Decision-2 (CD-2) to proceed with final design is currently under DOE review. Pilot Plant testing of the steam reforming process on surrogate SBW has also been completed and the results are being integrated into the design. CD-2 authorization is planned for September 2006, and CD-3 in May of 2007. To mitigate project schedule risk, several early procurements are planned to allow off-site fabrication of process equipment prior to CD-3. (CD-3A was approved in June 2006 to allow long lead procurement of special process materials and fabrication of limited process vessels.) SBW Treatment operations are planned to begin in the late 2009/early 2010 timeframe.

With regards to tank closures, DOE submitted a draft Section 3116 Waste Determination to the Nuclear Regulatory Commission in September 2005 to begin the consultation role. As of July 2006, the draft Waste Determination remains under NRC review. Although progress is being made, issuance of the 3116 Waste Determination is not likely until September 2006, which with subsequent issuance of an amended EIS ROD to support tank closures, will allow commencement of tank closures in the September/October 2006 timeframe.

Critical Milestone	Original Target Completion Month/Year	Revised Target or Actual Completion Month/Year
1. Issue Section 3116 Waste Determination for Tank Closures	04/06*	07/06 target
2. Approve Critical Decision CD-2/3A for SBW Treatment Project	10/24/06	CD-3A was approved 6/06. Revised target date for CD-2 is 9/06.
3. Approve Critical Decision CD-3B for SBW Treatment Project	7/31/06	9/06
4. Develop Waste Determination for SBW and obtain Regulatory approvals from EPA and NMED	TBD**	

* NRC role in the Waste Determination review for tank closures will require approximately one year as part of the process.

** The process and schedule for the SBW Waste Determination will be developed in consultation with appropriate regulators.

SUCCESS INDICATORS FOR CLOSED CORRECTIVE ACTION PLAN:

Is Plan closed__Yes _X_No, not applicable

Name: Scott G. Van Camp Date: 8/9/06
Scott G. Van Camp, Assistant Manager
Facility and Material Disposition

ACTION PLAN
IDAHO OPERATIONS OFFICE
July 2006

TITLE: Remediation of the INL Radioactive Waste Management Complex (RWMC)

ACTION PLAN: Reportable Problem X Reportable Non-Conformance __

HQ ORGANIZATION: EM **PROGRAM/ADMIN. FUNCTION:** Environmental Restoration (CERCLA)

DESCRIPTION:

In 1991, DOE, EPA Region 10, and the state of Idaho signed a Federal Facility Agreement and Consent Order (FFA/CO) for the CERCLA remediation of the INEEL. The agreement divided the site into ten Waste Area Groups (WAGs). WAG 7 is the RWMC that includes a 97-acre fenced Subsurface Disposal Area (SDA), RCRA compliant storage of TRU waste, the Advanced Mixed Waste Treatment Plant, and administration buildings. The SDA is an unlined landfill that, between 1952 and 1970, received mixed waste from INEEL operations and other DOE facilities, including large amounts of TRU and alpha-low-level mixed waste operations at the Rocky Flats Plant. The SDA still receives low-level radioactive waste from INL operations.

The remediation of RWMC is divided into four Records of Decision (RODs), three of which have been signed and are being implemented:

- OU 7-08, Organic Contamination in the Vadose Zone – This ROD was signed in 1994 and requires the vacuum extraction and destruction of volatile organic compounds from the vadose zone below the waste. New wells, piping improvements, and replacement of destruction units were completed in FY2003. The system will need to operate until remediation goals are met.

- OU 7-10, Pit 9 – This ROD was signed in 1993 and requires remediation of Pit 9. The current method of implementation of the OU 7-10 (Pit 9) ROD was developed through dispute resolution. All parties to the INL Federal Facility Agreement and Consent Order agreed to divide the remedy into three stages:
  1. Stage I was completed with the delivery of a retrieval system design to the regulators in July 2000.
  2. Stage II was completed in February 2004, eight months early, using the Glovebox Excavator Method (GEM) to demonstrate TRU waste retrieval in Pit 9.
  3. Stage III implementation has begun through submittal of the Accelerated Retrieval Project conceptual design as meeting the requirement for the Stage III 10% design.

- OU 7-12, Pad A – Pad A is an asphalt pad on which drums of uranium salts were placed and covered with dirt. The ROD requires that the cap be maintained until the OU 7-13/14 ROD is implemented. This year's inspection identified no problems.

- OU 7-13/14, WAG 7 Comprehensive ROD – This ROD, planned for 2008, will select the remedial approach for the entire RWMC; it is in the Remedial Investigation/ Feasibility Study stage.

The state of Idaho filed suit in District Court to determine if the language in Section B of the 1995 Idaho Settlement Agreement which states, "DOE shall ship all transuranic waste now located at INEL, currently estimated at 65,000 cubic meters in volume, to the Waste Isolation Pilot Plant (WIPP) or other such facility designated by DOE, by a target date of December 31, 2015, and in no event later than December 31, 2018." applied to the waste buried in the SDA. On March 31, 2003, the United States District Court for Idaho issued a ruling that the Idaho Settlement Agreement requirement applies to the TRU waste buried in the SDA, as well as to the stored TRU waste. The Department of Justice (DOJ) appealed this decision and the Ninth Circuit Court of Appeals reversed the decision and remanded the case back to the District Court. After trial, the Idaho District Court issued an opinion on May 25, 2006 that the buried waste "shall be removed, once it is determined if and how it can be safely moved, as directed by the FFA/CO and CERCLA." A Notice of Intent to Appeal was filed on July 24, 2006.

ASSESSMENT OF PROGRESS:

As noted above, progress in resolving applicability of the Settlement Agreement requirement to "...ship all TRU waste to the Waste Isolation Pilot Plant (WIPP) or other such facility designated by DOE.." to buried waste is dependent upon the final outcome of the litigation and guidance from DOE counsel on the matter.

DOE is making progress towards remediation of the buried waste and meeting the OU 7-13/14 milestones. DOE is using CERCLA non-time critical removal action authority to exhume targeted waste from specific, high-waste-density locations. Tentative agreement has been reached with the state of Idaho and EPA Region 10 on the priority of potential removal action locations. A removal action is in progress at Pit 4, which has high concentrations of targeted Rocky Flats waste. Operation of the Pit 4 retrieval system began in January 2005. Operation of the remainder of Pit 4 and Pit 6 is scheduled to begin during the summer of 2006. The OU 7-13/14 RI/FS enforceable milestones were extended 12 months. The Record of Decision (ROD) will establish the final cleanup plan for the SDA as a whole. It is anticipated that the ROD will be consistent with the ultimate outcome of the litigation discussed above.

Critical Milestones	Actual Completion or Enforceable Dates
Submit draft Remedial Investigation	August 2006 (Enforceable) December 2005 (Actual)
Submit draft Feasibility Study	December 2006
Submit draft ROD	December 2007

SUCCESS INDICATORS FOR CLOSED CORRECTIVE ACTION PLANS:

Is plan closed _____ Yes __X__ No, not applicable.

Name: E J Ziemianski Date: 8/14/06

Edward J. Ziemianski, Assistant Manager
Waste Disposition

ACTION PLAN
IDAHO OPERATIONS OFFICE (DOE-ID)
FY 2006

TITLE: Advanced Mixed Waste Treatment Project (AMWTP) Schedule Delay

ACTION PLAN: Reportable Problem _X_ Reportable Non-Conformance ___

HQ ORGANIZATION: EM **PROGRAM / ADMIN. FUNCTION:** Waste Disposition Program

BACKGROUND:

BNFL, Inc. was awarded a privatized, fixed-price contract on December 20, 1996, to remove 65,000m3 of transuranic waste from the Radioactive Waste Management Complex (RWMC) per the October 1995 Idaho Settlement Agreement. BNFL was replaced by Bechtel BWXT Idaho, LLC (BBWI) on May 1, 2005, and the contract was changed to a Management and Operating Contract. The new contract runs through April 30, 2006, with an option to be extended for up to three additional years. Shipments of waste from AMWTP began in 2003 and are expected to continue through 2012. Supercompacted debris shipments began in May 2005, and the project is ramping up to a maximum sustained shipping rate of approximately 29 shipments per week in August 2005.

DESCRIPTION:

The Settlement Agreement milestone to achieve 2,000m3 shipped per year over a three-year rolling average is in jeopardy. BBWI must ship 6,000m3 by December 31, 2005 to achieve the first three-year requirement and they have only shipped approximately 800m3 as of June 18, 2005. Contributing factors include insufficient data validators, box line equipment problems and process inefficiencies in the Treatment Facility, a lack of TRU-program certified waste backlog, and a shortage of RCRA-permitted floor space to store retrieved waste. BBWI is taking strong action to correct these deficiencies and substantially improve equipment reliability and shipment stability, but there is little to no contingency left in the shipping schedule to achieve 6,000m3 by December 31, 2005.

CONCLUSION:

BBWI is significantly behind schedule to meet the next important Settlement Agreement milestone (shipment of 6,000 cubic meters of waste from Idaho by the end of CY 2005) and BBWI will have to overcome several difficult obstacles in order to meet the milestone. These concerns meet several of the criteria for a reportable problem under DOE O 413.1A, MANAGEMENT CONTROL PROGRAM.

ROOT CAUSE:

Poor planning on the part of BNFL, and an emphasis on trying to achieve performance goals while minimizing cost under a fixed-price contract, has resulted in a project for which it will be very difficult to meet near-term performance objectives. This desire to minimize costs has resulted in non-performance of preventive maintenance and excessive equipment downtime, a lack of data validators resulting in no waste backlog and inefficient waste loading, and other equipment and personnel shortfalls.

IMPACT ON DEPARTMENT:

Not achieving 6,000m3 shipped of transuranic waste by December 31, 2005 will likely result in the state of Idaho preventing spent nuclear fuel shipments into the state until the 2,000m3 running average is achieved.

ASSESSMENT OF PROGRESS:

BNFL did not achieve shipping projections in 2004 or 2005. The Treatment Facility was not ready for the Carlsbad Field Office certification audit in 2004 and it was delayed until March 2005. Therefore, shipments of supercompacted debris were substantially delayed resulting in an extremely aggressive shipping schedule from May through December 31, 2005.

Action Required: On May 1, 2005, BBWI assumed management and operating responsibility for the AMWTP Contract. A number of performance incentives were put in place to encourage the contractor to achieve the 6000m3 milestone by the end of 2005. A comprehensive review was performed during transition to establish the material condition of the facility and assess available inventory for treatment. Immediate action was taken to ensure certification to ship waste to WIPP by BBWI. Initial shipping was slow; however, by September 2005, sustained shipment of waste was realized. CBFO established priority to ID for shipment of waste by providing upwards to 30 shipment assets per week. The settlement agreement milestone was achieved by February 21, 2006. Sustained performance continues and milestones for shipment will **easily be achieved.** BBWI's Contract was extended for two years commencing on May 1, 2006, that requires 15,500m3 of TRU waste to be retrieved, characterized, treated, certified, and shipped. This volume will contribute significantly to meeting the 2012 completion goal which would be six years ahead of the Settlement Agreement milestone of 2018.

Critical Milestones	Original Target Completion Month/Year	Revised Target or Actual Completion Month/Year
1. CAR closure for CBFO CAR # 04-033	08/04	08/04
2. DOE-ID AMWTP complete CAP for Improvement of Federal Oversight,	08/04	09/04

Critical Milestones	Original Target Completion Month/Year	Revised Target or Actual Completion Month/Year
AMWTP		
3. Develop and implement federal programmatic oversight program	09/04	09/04
4. Complete DOE ORR and Startup the Treatment Facility	09/04	08/04
5. Develop a Characterization, Treatment, and Shipping Production Schedule / Forecast and Establish Periodic Analysis and Review by DOE Management	09/04	09/04 (NOTE: The contractor did not begin achieving shipping projections until February 2005)
6. Complete CBFO Certification Audit of Treatment Facility	10/04	03/05
7. Receive Certification Authority from CBFO (NMED and EPA) for Treatment Facility processed waste.	02/05	05/05
8. Implement a real-time comment and approval process for procedure changes and waste lots	7/05	Web-based procedure review initiated 6/05
9. Increase waste certification rates and develop a waste backlog to support planned shipping rates	7/05	7/05
10. Achieve sustained and reliable operations of the Advanced Mixed Waste Treatment Facility	7/05	7/05
11. Achieve and maintain sufficient level of shipments per week to support Idaho Settlement Agreement Milestone.	8/05	8/05
12. Settlement Agreement Milestone – Ship 6,000m3 of waste out of the state of Idaho.	12/31/05	02/21/06

SUCCESS INDICATORS FOR CLOSED CORRECTIVE ACTION PLANS:

Is plan closed _X_ Yes __ No, not applicable

Name: E Ziemianski Date: 8/10/06

Edward J. Ziemianski, Assistant Manager
Waste Disposition

ACTION PLAN
IDAHO OPERATIONS OFFICE
July 2006

TITLE: Idaho Spent Fuel Facility (ISFF) (Spent Nuclear Fuel Dry Storage Project)

ACTION PLAN: Reportable Problem X Reportable Non-Conformance __

HQ ORGANIZATION: EM **PROGRAM/ADMIN. FUNCTION:** Privatization – Idaho Spent Fuel Facility

DESCRIPTION:

The Fiscal Year (FY) 2003 Assurance Memorandum included the following item as an emerging issue:

Foster Wheeler Privatization. NE-ID has a concern that Foster Wheeler Environmental Corporation (FWENC) may no longer have the financial capability to complete its firm fixed-price contract with DOE to design, build, and operate a facility to process Spent Nuclear Fuel (SNF) at the INEEL. FWENC's parent company, Foster Wheeler (FW) has sold FWENC to another company (Tetra Tech Inc.), however FW kept the FWENC Contract with DOE (DE-AC07-00ID13729). During the past year, FW's financial capability has deteriorated, and we are concerned that FW / FWENC may not be able to obtain the necessary financing to build and operate the SNF processing facility at the INEEL as required by contract. NE-ID is actively pursuing this potential issue while continuing to monitor the contract.

Resolution of the issue was modification of the FWENC Contract in February 2006. DOE-ID is using the DOE Order 413.3 process to select and implement another approach to provide SNF packaging, packaged SNF dry storage, and packaged SNF load-out for transport to the Monitored Geologic Repository (MGR).

BACKGROUND:

The DOE-ID SNF Program is responsible for the safe and efficient management of approximately 235 metric tones heavy metal (MTHM) SNF until the fuel leaves the state of Idaho. The program's end state includes preparation of the SNF for transportation to the MGR and final disposal.

In 1995, DOE signed a Settlement Agreement with the state of Idaho which requires placement of all DOE-controlled legacy SNF in dry storage by 2023, and removal from the states of Idaho and Colorado by January 1, 2035. The paragraphs pertinent to the FWENC Contract are F.2 (Construction of Dry Storage by July 1, 2003; note: letter # INTEC-SNF-00-005), and F.4 (spent fuel dry storage shall employ Multi-Purpose

Canisters or comparable system appropriate for shipment and disposal outside Idaho). To achieve these goals, the DOE-ID'S SNF program management strategy is to construct a facility with the core capability to repackage and store DOE-owned legacy SNF in DOE standard canisters (road-ready) as described in the Draft License Application for Yucca Mountain.

A privatized contract to provide this capability was awarded to FWENC on May 19, 2000. The contract provided for three fuel types [Training, Research, Isotopes, General Atomics (TRIGA); Shippingport Reflector; and, Peach Bottom -- approximately 20 MTHM of DOE-ID's total of 235 MTHM of legacy SNF] to be packaged and stored in accordance with the NRC license conditions and staged in road-ready condition to support removal from Idaho. FWENC was charged with the design, NRC-licensing, permitting, construction and operation of a facility capable of receiving, handling, packaging into standard canisters, and providing storage interim to shipping the road-ready SNF to the MGR.

ASSESSMENT OF PROGRESS:

FWENC did not start construction of the licensed facility design by December 31, 2005, the contract date for construction completion. On February 14, 2006, the contract was modified to remove all remaining facility design, facility construction, and facility operations requirements. FWENC's obligations under the contract are now limited to supporting a transfer of the NRC license from FWENC to DOE. The license transfer package is being reviewed by General Council.

SUCCESS INDICATORS FOR CLOSED CORRECTIVE ACTION PLAN:

Idaho Completion Project is using the DOE O 413.3 process to select the appropriate path forward to provide necessary SNF packaging, packaged SNF storage, and packaged SNF load-out capability. A Critical Decision 0 package including a confirmation of the Mission Need Statement approved in 1996 is being reviewed by EM-1 and the development of the Critical Decision 1, Selection of Alternative, documentation is in progress. Alternatives being considered include:

- Design and construction of a stand-alone facility capable of packaging and storing all DOE legacy SNF. The facility would be based on the FWENC design now held by DOE.
- Modification of existing SNF management facilities to provide the required packaging capabilities and use of modular pad storage of packaged SNF.

EM-1 approval of alternative selection is expected in Q1 FY 2007. A Summary Management Review for PBS ID-0012, Spent Nuclear Fuel Disposition, includes a discussion of the entire SNF project.

Is Plan Closed_X_Yes __No

Name: Scott G Van Camp Date: 8/9/06

Scott G. Van Camp, Assistant Manager
Facility and Material Disposition